



Teek and Tom Explore Planet Earth

Episode 4: An Ocean of Data From Cool Technology!

TRANSCRIPT

Teek

Hi, I'm Teek. I live on planet Queloz. For my final class project my teacher said,

Teacher Puna

Find a planet in this galaxy and explain how its atmosphere works.

Teek

So with my trusty spaceship BARY...

BARY

That's me!

Teek

I headed to Earth. That's where I met NOAA scientist Tom.

Real Tom

You've come to the right person.

Teek

Now, he's showing me how awesome Earth is.

Cartoon Tom

It's so beautiful.

Teek

I can't wait to learn more. Let's go!

Cartoon Tom

Hey Teek, what do you think that cloud looks like? Sorta looks like an elephant playing the trombone to me.

Teek

Uhhhhhhh...ugh.

BARY

That cloud appears to be millions of suspended atmospheric water particles.

Teek

Uhhhhhhh...ugh.

Cartoon Tom

Teek? You alright? Need a hand—a tentacle?

Teek

Oh it's nothing [grunting]...just trying to fix the kiz-ometer that's been on the fritz. Ah, ok that should do it! Sometimes when you build all your own equipment, you're the only one who can fix it!

Cartoon Tom

Woah! You built all these instruments?

Teek

Yep! They help me monitor the conditions inside and outside BARY, and make sure we don't run into any more asteroids.

BARY

Hey, my navigation system can dodge asteroids just fine on its own, thank you. But I am sensing that something is loose.

Teek

Ok, no more talking about *my* instruments.

BARY

Correction: *our* instruments!!

Teek

Ah, sorry BARY. Let's just talk about how instruments on Earth help forecast weather and climate.

Cartoon Tom

Ok, Teek! So..you want to learn about all the cool technology we use to monitor our ocean and atmosphere?

Teek

Oh my gosh, YES!

BARY

I did warn you something was loose.

Teek

Be right back...

Cartoon Tom

In order to make accurate weather and climate forecasts, we need a lot of information about the ocean and atmosphere.

BARY

Correct. Sensors have picked up numerous Earthling-made monitoring satellites orbiting your planet.

Cartoon Tom

Yup! NOAA currently operates 17 different satellites. They're like eyes in the sky! They tell us all kinds of info about the health of the ocean and atmosphere. But we've only had this ability for around 60 Earth years. Whoa, Teek! Watch out for that polar orbiting satellite!

Teek

Wheee! This is fun! And 60 Earth years? That's like half a Queloz year. That's not a lot

Cartoon Tom

I know! Before that, scientists were trying to put together a puzzle but missing a bunch of pieces. Now the satellites provide us with additional data we didn't have before!

BARY

Tom, can you tell us more about science gathering technology on your planet? I am thrilled to learn more.

Teek

Woah BARY, I've never seen you like this! I should have figured you, of all...sentient intelligence...would dig Earth tech.

Cartoon Tom

Let's get right to it then, starting in the atmosphere. Weather balloons are launched daily carrying sensors that measure temperature, air pressure, wind speed, and wind direction. Really simple but really important.

Teek

I know I shouldn't pop that...but I *really* want to pop it.

BARY

Agreed. Activating forward facing lasers in 3...2...1...

Cartoon Tom

NO, no, no! BARY, don't, no, don't, don't! I know...it's SOOOOO tempting. Let's get out of here before we do anything rash. Oh, why don't we go watch some cool NOAA tech videos.

Teek

Oh my gosh YES! BARY, take us to a movie theater!

Cartoon Tom

Now, I'm not the most tech savvy Earthling around but I still wanted you to see how seriously we take our tools. Also...my favorite: Earth POPCORN

Teek

Mmm, Eaaarrth popcorrrrrnn. You Earthlings may be way behind us in space travel but your snack game is *on point!*

Cartoon Tom

Awww shucks.

Teek

MORE PLEASE

Cartoon Tom

Instruments or popcorn?

Teek

POPCORN

BARY

INSTRUMENTS

Cartoon Tom

Ok, let's start up high. Our hurricane hunter aircraft release instruments called dropsondes.

BARY

[interrupting] Dropsondes measure atmospheric variables like temperature, pressure and humidity as they slowly fall to the ocean or land surface.

Cartoon Tom

That's right BARY. But how did you know that already?

BARY

I simply accessed my intergalactic intelligence system to learn everything about dropsondes the moment you said it.

Cartoon Tom

Heh, cool! Well thanks for dropping that knowledge on us.

Teek

I'm releasing some dropsondes right now!

BARY

Next instrument, please.

Cartoon Tom

Oh these are cool. Scientists use drones to gather data from places that other research tools can't go. Data from this drone, the RAAVEN, or Robust Autonomous—

BARY

[talking over Tom] Robust Autonomous Aerial Vehicle Endurant Nimble. It measures things like wind and air turbulence near clouds. Check out that air frame. Very creative.

Cartoon Tom

I, uhh, was going to say that. Yes, creative.

Teek

I'm learning so much from you BARY! And, uh, from you too, Tom.

Cartoon Tom

Hehe. Heading to the ocean now. Wave gliders are solar powered—

BARY

are solar-powered surfboards that propel themselves across the ocean surface. They measure ocean currents, temperature and salt content, and also get information on how the ocean surface interacts with the air above it. Then, they transmit that data to Earthling scientists on shore via satellite.

Teek

Oh, I want to build one of those. Thanks BARY.

Cartoon Tom

Mmm hmm. Thanks BARY. Check out this CTD.

Teek

CT-what?

Cartoon Tom

Oh, CTD stands for conductivity, temperature, and depth. And, you know what BARY, I think you already know what this is. Go ahead...

BARY

O-M-G yes. CTDs are one of the essential tools for studying Earth's ocean. Made up of a bunch

of instruments, CTDs are lowered into the ocean where they record the chemical and physical properties of the entire water column!

Cartoon Tom

You got it once again BARY. It's sorta like a dropsonde but for water not air.

Teek

Woah! I want to be on that ship!

Cartoon Tom

Me too. This data, all 25 petabytes of it—that's a lot—forms the backbone of not only our understanding of our planet, but also our models that help us issue forecasts. I've saved this *other* video for you too BARY.

BARY

EEEEEEEEK! The ROV Deep Discoverer? The ROV or remotely operated vehicle Deep Discoverer is amazing. It provides scientists access to the ocean deeper than humans can safely swim or submarines can dive up to 3.7 Earth miles. It collects water and specimen samples to reveal more about what's at the bottom of the ocean.

Cartoon Tom

Check out what it's found.

Teek and BARY

It's beautiful.

Teek

I love Earth...

BARY

That was my type of movie! It had suspense, and cool gadgets.

Teek

And buckets and buckets of salty, greasy, delicious popcorn.

Twilerp

Hey Teeky Teek, Where ARE YOU? We're waiting for you at the bowling alley!

Teek

Oh NO! Sorry I'm late. I was learning about cool Earth tech. Coming now!

Cartoon Tom

Wait, they have bowling on Queloz?

Teek

Uh, yeah, bowling is popular everywhere in the universe? Oh, before you go, I made you this.

Cartoon Tom

Oh my gosh, that's so nice. But when did you have time to make me this tiny amazing RAAVEN drone replica?

Teek

Oh, it's not a replica. BARY, drop Tom back at NOAA!

BARY

[loud belch]

REAL Tom

Ugh! Bye Teek! Bye BARY! I can't wait until next time. Maybe not this part. Ugh, that was a lot of fun but I'm never going to get used to this.

Voice in Tom's head

I wonder if anyone wants to go bowling with me tonight.

Teek

What a day! BARY I know how cool you thought all that Earth tech was!

BARY

Best Earth day ever! But, I'm still your favorite tech...right, Teek?

Teek

BARY, you're not....jealous? You *know* you're my favorite. Now, can you please open up my student log.

BARY

It's just nice to hear that out loud sometimes. Student Log accessed. Recording now.

Teek

You bet, Ok. Day 4: Final Project. Today, Tom showed me, and my best tech friend BARY, all sorts of cool tools that Earthlings use to monitor their planet.

BARY

Creating list of technology featured by scientist Tom. 1) Satellites that monitor Earth from space. 2) Weather balloons that measure the atmosphere and should not be popped by planetary visitors. 3) Various instruments that study the ocean and soar in the skies. 4) A submarine that explores the deep, deep ocean.

Teek

They all had such fun names. Wave gliders, the RAAVEN, CTDs, dropsondes, and the ROV Deep Discoverer. Tom really made it fun learning how important all this data is in helping their weather and climate forecasts.

BARY

As technology myself, it was fun learning about new friends. Now, should I access your bowling simulator for practice?

Teek

Oh right. Yes, please. This time I want to get the highest score.

BARY

Affirmative. Commencing bowling alley mode now.

Teek

Ahh, no. Whee! Haha.

Real Tom

Whoaaaaa! Whoaaaaa! Ahhhh!

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